

Name: _____ TP: _____

Take Home Test 6 - Congruent Triangles and Triangles
Geometry

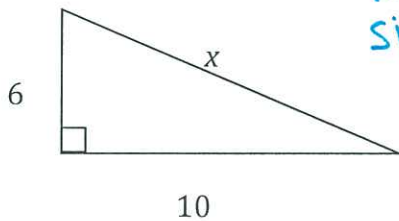
Form A

Directions: Answer the following questions to the best of your ability. Show all your work on THIS quiz.
YOU MUST BOX YOUR FINAL ANSWER TO RECEIVE CREDIT!

***You must work on this test on your own. If it looks like you worked with someone else you will get a zero and 4 Demerits. You may use your parents, your notes, and the internet for help.
I agree to the above statement***

Signature: _____

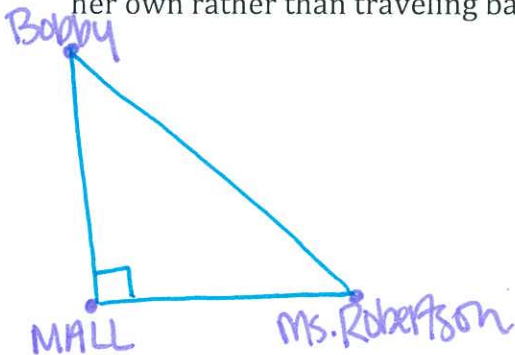
1) Find the value of x in the right triangle below.



what theorem should you use to find the missing side length of a RIGHT triangle?

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2) Ms. Robertson lives 50 miles away from the Oakland Mall. She is traveling 80 miles from the mall to visit her son, Bobby. How much shorter is it for Ms. Robertson to cut diagonally from Bobby's home to her own rather than traveling back to the mall and then home?



- ① Label missing sides
- ② Determine diagonal distance
- ③ Determine "how much shorter"

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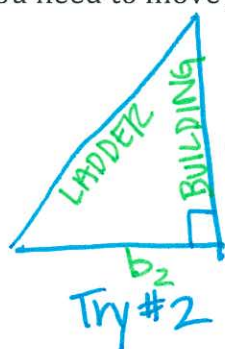
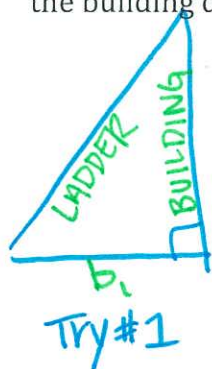
3) Andersonville is located at $(10, -2)$, and Benson is located at $(-6, -4)$. What is the distance in miles between the two cities?

What formula should you use to find the distance between two coordinates? Label your coordinates (x_1, y_1) .

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→ What you NEED to reach... Try #2!

4) You are using a 20-foot ladder to re-paint a second story window. The window you need to reach is 10 feet above the ground on a wall that is perpendicular to the ground. The first time you lean your ladder to the side of the building, it only reaches 8 feet off of the ground. Approximately how many feet closer to the building do you need to move your ladder in order to reach the window (round to the nearest tenth)?



- ① Label missing sides
- ② Set up TWO equations
- ③ Find the difference between the "b" values.

Try #1; LABEL on 1st diagram!

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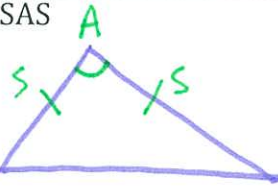
5) Draw an example of each of the following triangles with appropriate notation (in other words, label sides with measurements/numbers and indicate congruent sides and angles). *Use tick marks & angle arcs

a) Obtuse Scalene	b) Acute Isosceles	c) Equilateral

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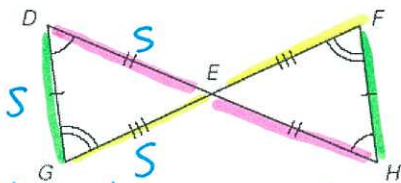
6) List all triangle congruency postulates and a diagram of each.

*LOOK UP ALL SIX congruency postulates in your notes!

a. SAS 	b.	c.
d.	e.	f.

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7) Prove: $\triangle DGE \cong \triangle HFE$



Statement | Reason

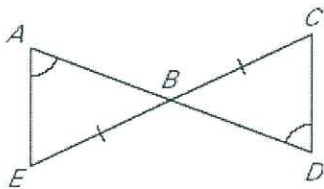
- | | |
|---|---|
| ① | ① |
| ② | ② |
| ③ | ③ |
| ④ | ④ |

- ① color code corresponding sides/angles
- ② label "S" & "A" on ONE triangle
- ③ List givens in proof chart
- ④ List prove statement & for the reason, list the congruency postulate (for example, SAS).

8)

GIVEN: $\overline{BE} \cong \overline{BC}$, $\angle A \cong \angle D$

PROVE: $\triangle ABE \cong \triangle DBC$

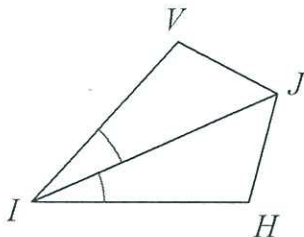


*Hint: Two angles in the diagram are \cong because they are _____ angles. Mark them!

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9) Given $VI \cong HI$

Prove $\triangle LMN \cong \triangle NTL$



*Hint: One side is \cong in the diagram as listed in the "given." Mark it!

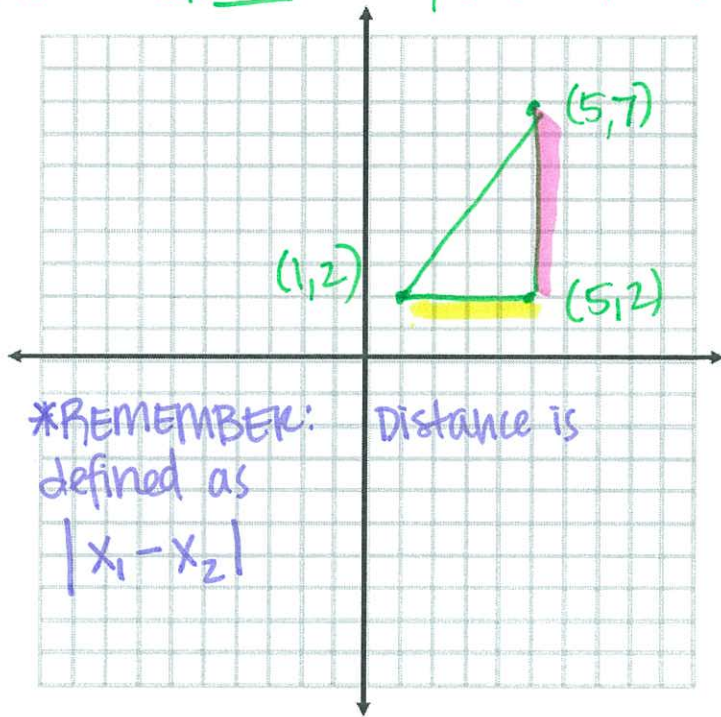
*Hint: One side is \cong because of the _____ property. Mark it!

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10) In at least 5 sentences explain how to derive the distance formula from Pythagorean's Theorem. You must explain by using a graph to support your explanation. (if you don't remember, look it up online! A good google search to start with: "Pythagorean Theorem derived from distance formula")

*Be as SPECIFIC as possible to earn FULL credit.



EXTRA CREDIT: Create your own figure with two triangles. Write a proof that proves the two triangles are congruent. You will receive 1 point of E.C. for each correct statement/reason use to complete the proof. You will only get 1 point total for "given" information.

* No extra help here, BUT, look back @ your notes for example proofs!

+ _____

HAVE A WONDERFUL WINTER BREAK!
RELAX... you DESERVE it ☺